

THAT WHICH IS CLAIMED IS:

1. A portable electronic device, comprising:
a housing;
an antenna associated with the housing; and
5 a multi-mode matching circuit operatively associated with the antenna, the multi-mode matching circuit being configured to operate in a first mode when the housing of the portable electronic device is in a first configuration and in a second mode when the housing of the portable electronic device is in a second configuration.
- 10 2. The portable electronic device of Claim 1, further comprising a sensor operatively associated with the multi-mode matching circuit, wherein the sensor is configured to detect the first configuration of the housing of the portable electronic device and/or the second configuration of the housing of the portable electronic device and wherein the multi-mode matching circuit is configured to adjust at least
15 one parameter of the multi-mode matching circuit responsive to the first and/or second detected configurations of the housing of the portable electronic device.
- 20 3. The portable electronic device of Claim 2 wherein the multi-mode matching circuit comprises an impedance matching circuit and wherein the at least one parameter of the multi-mode matching circuit comprises a resistance, a capacitance and/or an inductance.
- 25 4. The portable electronic device of Claim 2 wherein the at least one parameter is stored in a lookup table, the portable electronic device further comprising a processor operatively associated with the sensor, the processor being configured to locate the at least one parameter in the lookup table using the first and/or second detected configuration of the housing of the portable electronic device as a pointer for an entry in the lookup table.
- 30 5. The portable electronic device of Claim 2, further comprising a timer circuit operatively associated with the sensor, wherein the sensor is further configured to detect the first and/or second configuration of the housing of the portable electronic device responsive to expiration of the timer circuit.

6. The portable electronic device of Claim 1 wherein the portable electronic device comprises a portable electronic device having a flip configuration, wherein the housing of the portable electronic device is in the first configuration when the portable electronic device is open and wherein the housing of the portable electronic device is in the second configuration when the portable electronic device is closed.

7. A mobile terminal, comprising:
a housing;
10 an antenna associated with the housing;
a multi-mode matching circuit operatively associated with the antenna; and
a sensor operatively associated with the multi-mode matching circuit and configured to detect a position of the antenna relative to the housing and/or a configuration of the housing of the mobile terminal, wherein the multi-mode matching
15 circuit is configured responsive to the detected position of the antenna and/or the configuration of the housing of the mobile terminal.

8. The mobile terminal of Claim 7, wherein the multi-mode matching circuit is further configured to operate in a first mode when the detected position is a first detected position relative to the housing and/or the housing of the mobile
20 terminal is in a first configuration and in a second mode when the detected position is a second detected position relative to the housing and/or the housing of the mobile terminal is in a second configuration and wherein the multi-mode matching circuit is configured by adjusting at least one parameter of the multi-mode matching circuit
25 responsive to the first and/or second detected position of the antenna and/or the first and/or second configuration of the housing of the mobile terminal.

9. The mobile terminal of Claim 8, wherein the multi-mode matching circuit comprises an impedance matching circuit and wherein at least one
30 of the parameter of the multi-mode matching circuit comprises a resistance, a capacitance and/or an inductance.

10. The mobile terminal of Claim 8 wherein the at least one parameter is stored in a lookup table, the mobile terminal further comprising a processor

operatively associated with the sensor, the processor being configured to locate the at least one parameter in the lookup table using the first and/or second detected position and/or the first and/or second configuration as a pointer for an entry in the lookup table.

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11. The mobile terminal of Claim 8 further comprising a timer circuit operatively associated with the sensor, wherein in the sensor is further configured to detect the position of the antenna relative to the housing and/or the configuration of the housing of the mobile terminal responsive to expiration of the timer circuit.

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12. The mobile terminal of Claim 8 wherein the mobile terminal comprises a mobile terminal having a flip configuration, wherein the housing of the mobile terminal is in the first configuration when the mobile terminal is open and wherein the housing of the mobile terminal is in the second configuration when the mobile terminal is closed.

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13. The mobile terminal of Claim 8 wherein the antenna comprises a retractable antenna, wherein the antenna is in the first position when the retractable antenna is retracted and wherein the antenna is in the second position when the retractable antenna is extended.

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14. A method of operating a portable electronic device, comprising:
detecting a configuration of a housing of the portable electronic device; and
adjusting a multi-mode matching circuit based on the detected configuration of
the housing of the portable electronic device.

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15. The method of Claim 14 wherein the multi-mode matching circuit is operatively associated with an antenna of the portable electronic device and wherein adjusting the multi-mode matching circuit comprises adjusting at least one parameter of the multi-mode matching circuit responsive to the detected configuration of the housing of the portable electronic device.

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16. The method of Claim 15 wherein adjusting at least one parameter of the multi-mode matching circuit comprises adjusting a resistance, a capacitance and/or an inductance of the multi-mode matching circuit.

5 17. The method of Claim 16 wherein the at least one parameter is stored in a lookup table, the method further comprising locating the at least one parameter in the lookup table using the detected configuration as a pointer for an entry in the lookup table.

10 18. The method of Claim 14 wherein detecting a configuration of the housing of the portable electronic device further comprises repeatedly detecting the configuration of the housing of the portable electronic device responsive to a detected change in position of the housing.

15 19. The method of Claim 14 wherein detecting a configuration of the housing of the portable electronic device further comprises periodically detecting the configuration of the housing of the portable electronic device responsive to expiration of a timer circuit.

20 20. The method of Claim 14, further comprising:
operating the multi-mode matching circuit in a first mode when the detected configuration is a first detected configuration; and
operating the multi-mode matching circuit in a second mode when the detected configuration is a second detected configuration.

25 21. The method of Claim 20 wherein the portable electronic device comprises a portable electronic device having a flip configuration, wherein the housing of the portable electronic device is in the first configuration when the portable electronic device is open and wherein the housing of the portable electronic
30 device is in the second configuration when the portable electronic device is closed.

22. A method of operating a mobile terminal, comprising:
detecting a position of an antenna relative to a housing of the mobile terminal
and/or a configuration of the housing of the mobile terminal; and
configuring a multi-mode matching circuit responsive to the detected position
5 of the antenna and/or the configuration of the housing of the mobile terminal.

23. The method of Claim 22 wherein the multi-mode matching circuit is
operatively associated with the antenna of the mobile terminal and wherein
configuring the multimode matching circuit comprises adjusting at least one
10 parameter of the multi-mode matching circuit responsive the detected position of the
antenna and/or the configuration of the housing of the mobile terminal.

24. The method of Claim 23 wherein adjusting at least one parameter of
the multi-mode matching circuit comprises adjusting a resistance, a capacitance
15 and/or an inductance of the multi-mode matching circuit.

25. The method of Claim 23 wherein the at least one parameter is stored in
a lookup table, the method further comprising locating the at least one parameter in
the lookup table using the detected position and/or configuration as a pointer for an
20 entry in the lookup table.

26. The method of Claim 22 wherein detecting a position of an antenna
relative to a housing of the mobile terminal and/or a configuration of the housing
further comprises repeatedly detecting the position and/or configuration responsive to
25 a detected change in position of the antenna relative to the housing and/or a
configuration of the housing.

27. The method of Claim 22 wherein detecting a position of an antenna
relative to a housing of the mobile terminal and/or a configuration of the housing
30 further comprises periodically detecting the position and/or the configuration
responsive to expiration of a timer circuit.

28. The method of Claim 22, further comprising:

operating the multi-mode matching circuit in a first mode when the detected position and/or detected configuration is a first detected position and/or detected configuration; and

5 operating the multi-mode matching circuit in a second mode when the detected position and/or the detected configuration is a second detected position and/or detected configuration.

29. The method of Claim 28 wherein the mobile terminal comprises a

10 mobile terminal having a flip configuration, wherein the housing of the portable electronic device is in the first detected configuration when the mobile terminal is open and wherein the housing of the mobile terminal is in the second detected configuration when the mobile terminal is closed.

30. The method of Claim 28 wherein the antenna comprises a retractable

15 antenna, wherein the antenna is in the first detected position when the retractable antenna is retracted and wherein the antenna is in the second detected position when the retractable antenna is extended.